Arizona Health Education Centers
11th Annual Interprofessional RHPP Conference
Poster Presentation
A Community Assessment of Benson, Arizona

INTRODUCTION
The purpose of this presentation is to review a team-based community assessment identifying strengths, assets, and needs in the community of Benson, Arizona.

METHODS
Data collection methods included internet data collection, municipal/federal resources, and direct observation:
- Primary Data Source:
  - Community member interviews
  - Website and walking surveys
  - Review of community assessments

HISTORY & CULTURE
- Founded in 1880 around the Union Pacific Railroad station to export copper and silver from the surrounding mines.
- Established as a highway city in 1904.
- Benson is home to Knottkevogt State Park named best camp in the nation by USA Today which attracts thousands of visitors annually.

PHYSICAL ENVIRONMENT
- Many small, rural, and suburban homes
- General appearance is clean
- Building off of Oceanic Rd and 1-10 appears to be barely standing after a fire
- Air was clean smelling (unpolluted)
- Green areas present throughout the town such as parks
- No stray animals were encountered
- Several Rv parks
- Some neighborhoods had small lots with houses close together
- No litter or pests were seen
- Railhead tracks divide town

VALUES & BELIEFS
- Numerous, Christian churches present
  - Catholic
  - Lutheran
  - Seventh Day Adventist
  - Protestant
  - Latter Day Saints (LDS)
  - Veterans Memorial
- Wal-mart community involvement & participation in local events & activities
  - School Sporting Events
  - Food
  - Habitat For Humanity

ECONOMICS & NUTRITION
- Profits on Wheels Without Waste
- Community food pantry
- Grocery stores:
  - Walmart
  - Dollar tree
- Property to be the city with the largest growth in Cochise County by 2050
- Deemed to be the city with the largest growth in Cochise County by 2050
- Cereal to table ratios (10, 50, 90, 25, Union Pacific Railroad)
- Increased residential and retirement community developments

SAFETY & TRANSPORTATION
- Benson Area Transit (BAT) (2022)
  - Fixed route & Dial A Ride
  - Greyhound Bus service
- Benson has the only AMTRAK passenger station in Cochise County.
- V-Dial (Volunteer Interfaith Caregiver Program)
- Transportation: Pima Regional Planning Commission
- Benson Police Department
- Benson Fire Department (volunteer)

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SUMMARY
Assets
- An interview with Benson Mayor Koerner and Mrs. Koerner from the Unified School District:
  - Most community members are willing to be involved
  - They have 2 food assistance programs in Benson
  - Produce on Wheels Without Waste
  - Benson Food pantry
- Benson recently got a new Chief of Police who says he pays more for more involvement in the community and are willing to help. He recently solicited a grant for two school resource officers.
- The school district is the land receives funding to assist with after school programs
- They offer alternative school methods such as charter and online education

Limitations
- Median income is lower than the state average
- Limited career opportunities
- Access to healthcare services

Recommendations
- Benson Hospital 2020-2022 Assessment and 2017
- Cochise County Assessment:
  - More career opportunities
  - Healthy living, eating, drinking
  - Mental health and STI/STD services
  - Healthy eating, obesity, diabetes

CONCLUSION
- Benson is a medically underserved area and faces many challenges as a rural city. Benson’s community action, assets, and momentum towards growth will greatly assist in the development and implementation of resources and solutions around the community’s needs.

ACKNOWLEDGEMENTS
- The University of Arizona AHEC Area Health Education Centers
A Community Assessment of Cocopah Community

WAHEC Scholars 2022-2023

Anna Connell, Estefani Flores, Gabriela Flores, Melody Guinn, Irina Hegazy, Tiffany Kidd, Kathryn King, Allison Leang, Amy Og, Kyprin Prosperoni, Matthew Rohler, Frank Rosenberg, Anthony Smallcyrene, Nykol Turner, Christine Winter

Introduction

This presentation is related to the Cocopah Indian Tribe Community, also known as the River People, within Southwest Arizona. The Cocopah Indian Tribe land base is approximately 9.4 square miles with 6,500 acres along the Lower Colorado River (Cocopah Indian Community Profile 2022). The Cocopah reservation is divided into three reservations: North, West, and East.

Demographics

The Cocopah Indian Tribe comprises approximately (First Things First, 2022):
- 1,704 enrolled members
- 527 adult individuals and 46 children under 5 living on the reservation
- Median age of the tribal population is 46.6 (US at 38.1)
- English is identified as Primary Language
- Spanish and Yuman are Secondary Languages

Community Health Status

The health status of the Cocopah Indian Tribe is protected by Indian Health Services (IHS). Here are some health statistics available to the public:
- 11 births per year
- 21% without health care coverage
- 13.7% disabled
- All children vaccinated at Head Start are up to date on all vaccines (2015-2017)
- 24 non-first emergency room visits
- Most common reasons are falls (2.7%)

Method

To accomplish our goal, we employed a participatory observation method of information collection. Utilizing our experience of the reservation through a guided tour and using our field findings, we compiled an analysis of our results pertaining to the Cocopah Tribe focused on:
- Chronic Disease
- Hospitalization
- Incidence Rates for members of the Cocopah Tribe
- Access to services

Purpose

The purpose of this community assessment is to coordinate with the Cocopah Nation to learn about the community's history, culture, environment, resources, and unique needs in order to effectively implement supportive assistance.

Vision and Mission

WAHEC Community Health Needs Assessment

Primary Concerns of patients within Yuma area
- Access to healthcare services
- Barriers to entry
- Primary care physician ratio
- Source of paying medical care
- Routine medical care
- Seeking medical care in Mexico
- Eye examination

Conclusion

Cocopah people have a long history of rich cultural traditions and community strengths. They are actively working to improve conditions on the reservation in relation to community health, transportation, environmental resources, and more. We are honored to be learning alongside this community and aim to follow their lead in a supportive partnership that will carry over the next year.

References

- Personal values in various states of repair
- Tribal vehicles reserved for disabled to get to and from medical visits
- Cocopah has their own police station in town for emergencies
- Fire and Emergency Medical Services (EMS) through Yuma, AZ
A Community Assessment of Nogales, AZ
School Affiliations: Northern Arizona University and The University of Arizona, Faculty Advisor: Dr. Nancy Johnson

INTRODUCTION
The purpose of this presentation is to discuss the strengths, weaknesses, and areas of opportunity within the community of Nogales related during a community assessment. The overall goal is to identify the community's underrepresented healthcare issues and needs and develop a community project that will benefit the people of Nogales.

FINDINGS
Demographics
- Population: 18,183 people
- 14.1% of the population at Nogales High is Hispanic
- Approximately 51% identify as white and Hispanic, while 14.1% identify as two races, and 1.1% identify as other races.

Economies and Income
- Approximately 42% of the households have an annual income of $11,000 or less.
- Blacks have a lower median income than whites, with an annual income of $47,227.
- The median household income is $49,000.
- The median income for households is $53,000.

Education
- Three of the five major K-12 schools in Nogales have below average test scores.
- School facilities need to be improved to meet the needs of the community.

Housing
- Residential areas are distant from the main business area.
- Many homes are located on the outskirts of the city.
- Mix of new and old homes is more common in the community.
- Many homes are located on the main roads and are close to businesses.

Transportation
- Local transportation is available.
- Public transportation is limited.
- Limited access to public transportation.

Recreation
- Parks and recreation centers are available in Nogales.
- Public parks and recreational areas are limited.

Community Resources
Mariposa Community Health Center
- Medical health services (Behavioral health care, OB/GYN, Pediatrics, and OB/GYN)
-moonLIT health services
- Community health services
- Health services available on campus
- Mariposa Community Health Center
- Community health services
- Health services available on campus

Holy Cross Hospital
- STD/STI services
- STD/STI services
- STD/STI services
- STD/STI services
- STD/STI services

Southeast AZ Health Education Center
- Health education on Aztec Indian Health
- Training of community health workers (CHW)
- Victims and Family Services
- COVID-19 assistance and vaccine distribution

Mental Health Resource
- Rural Health Center
- Community Health Center
- Veterinary Health Clinic
- Housing and Community Services

Resources Available in the Community
- Elementary schools
- Community health clinics
- Public safety
- Public safety
- Public safety

Community Outreach
- Free dispensing of CPR and first aid training
- Free dispensing of CPR and first aid training
- Free dispensing of CPR and first aid training

CONCLUSION
Community Strengths
Nogales has a strong community that is family oriented, a sense of community, and a strong sense of belonging.

Areas for Improvement
- Lack of pedestrian access
- Lack of public transportation
- Lack of recreational programs
- Lack of opportunities
- Lack of public safety

Interventions
Focus on integrating local resources to improve patient education and resources for available resources so they can be better utilized.

REFERENCES AND ACKNOWLEDGEMENTS
- NAU Northern Arizona University
- AHEC AHEC AHEC AHEC AHEC
Community Assessment of North Yavapai County (Prescott, Chino Valley, & Paulden)


Central Arizona Area Health Education Scholars Program with Dr. Signyana Karuppappa, Faculty Mentor

INTRODUCTION / PURPOSE
The purpose of this presentation is to share the results of a travel-based field experience in Prescott, Chino Valley, and Paulden, AZ. As a means of identifying the health needs, and priorities among community members, this experience was designed to develop a comprehensive needs assessment.

METHODS
This evaluation was conducted in the spring of 2023, involving a mixed-method approach, including surveys, focus groups, and interviews with community members and local organizations.

COMMUNITY DEMOGRAPHICS

- **Population**: Prescott - 45,000; Chino Valley - 25,000; Paulden - 1,000
- **Age Distribution**: Prescott - 25% under 18, 60% 18-64, 15% over 65
- **Race/Ethnicity**: Prescott - 75% White, 15% Hispanic, 10% Other

COMMUNITY DESCRIPTIONS

- **Tourism**: Prescott - 2.5 million visitors annually
- **Education**: Prescott and Chino Valley offer a variety of educational opportunities.
- **Economic Development**: Prescott and Chino Valley are known for their strong economies, with industries including tourism, education, and healthcare.

COMMUNICATION

- **Social Media**: Prescott and Chino Valley are active on social media platforms, engaging with community members.
- **Community Events**: Regular community events are held, including festivals and cultural celebrations.

COMMUNITY NEEDS

- **Healthcare Access**: Access to healthcare services is limited in some areas.
- **Economic Challenges**: Many individuals face economic challenges, including unemployment and poverty.
- **Environmental Concerns**: Concerns about air quality and water availability are prevalent.

COMMUNITY RESOURCES

- **Healthcare Providers**: Prescott and Chino Valley have a variety of healthcare providers, including hospitals and clinics.
- **Community Organizations**: Local organizations provide support and resources to community members.

SAFE TRANSPORTATION

- **Public Transportation**: Limited public transportation options are available.
- **Emergency Services**: Prescott and Chino Valley have emergency services available.

CONCLUSION

The results of this assessment highlight the need for improved healthcare access, economic development, and environmental protection in Prescott and Chino Valley. Further research and community engagement are recommended to address these needs effectively.

ACKNOWLEDGEMENTS

This project was supported by the Central Arizona Area Health Education Scholars Program with Dr. Signyana Karuppappa, Faculty Mentor.

REFERENCES

- Arizona Department of Health Services (2023). Health profiles: Prescott, Chino Valley, and Paulden, AZ.

SUMMARY AND ANALYSIS

The population demographics of Prescott, Chino Valley, and Paulden indicate a need for improved infrastructure, healthcare services, and economic development to address community needs effectively.
A Community Assessment of Sierra Vista, Arizona
Molly Ament, Amber Brewer, Alicia Garcia, Caleb Owens, Ian Pieroni, Jill Quillman, Nim Sidhu, Peri Tohm, SAAHEC Scholars 2022-2024

INTRODUCTION
This poster was representative of a community assessment of Sierra Vista, Arizona. It served the purpose of reporting and evaluating the results of the windshield survey and interviews with key stakeholders in the community in order to highlight the strengths and areas for opportunity in Sierra Vista.

HISTORY & CULTURE
While the city of Sierra Vista was founded in 1907, its role in military history can be traced back much further. Fort Huachuca was established in 1877 and played a significant role in the Indian Wars of the 1870s and 1880s. Fort Huachuca was also home to the 10th Cavalry, often known as the Buffalo Soldiers. Many original military buildings and officer’s homes are still standing today across Fort Huachuca.
Sierra Vista worked hard to preserve its history and has homes to tour. One was the Fort Huachuca Historical Museum and the other, the Mother H. Noir Museum, by the City of Sierra Vista, which contains relics within and explains about the early years of Sierra Vista.

Sierra Vista, in Cochise County, located 16 miles northeast of the famous wild west town, Tombstone. Additionally, the southernmost part of the state is the historic mining town of Bisbee.

Sierra Vista has a large population of active duty military and their families as well as retired individuals in the community.

METHODS
- **Primary Data Sources**
  - Engaged in interprofessional meetings to learn about social determinants of health in order to apply key concepts to the windshield survey
  - Interviewed key stakeholders in the community
  - Interviewed community members
- **Secondary Data Sources**
  - Sierra Vista government website
  - Census data

FINDINGS
**Demographics**
- According to the 2020 US Census, Sierra Vista had a population of 43,086 and was growing annually by 3.3% per year.
- Sierra Vista had a predominantly Caucasian population at 76.4%.
- The second largest racial group were individuals who were Hispanic/Latinos. The third largest racial group were individuals that identify as two or more races (13.15%).
- Sierra Vista had a large military presence due to Fort Huachuca with 2,980 active duty military personnel and 9,268 civilians in the area.

**Economic**
- Some of the main industries in Sierra Vista were military and defense in cybersecurity, retail, education, tourism, and healthcare.
- The median household income, according to 2020 Census data was $51,100/year and the per capita income was $19,000/year.
- Persons in poverty: 11.1% of the population.

**Health**
- Major differences between homes and neighborhoods in Sierra Vista.
- Median household value (2013) is $209,000 and the market has climbed up 12.8% over the last year.
- Median rent is $1,100/month (34.9% less than the national average).

**Health and Community Resources**
- Many of the right health resources on the poster were identified based off of community needs identified by members of the community, key stakeholders.
- Sierra Vista was suffering from a large homeless problem and public utilities were low resources to help people in need of shelter or food. These were Catholic Community Bank, the Texas Neighborhood Alliance, and the Community Food Bank of Southern Arizona.
- There were two churches were Ohioan or Catholic and there were a total of 56 services. Many of the religious organizations had some sort of community outreach programs.
- There were many programs for children through the city or school and a some community improvement programs.
- Sierra Vista had an abundance of grocery stores, fast food restaurants, and other retail stores.
- Environment
  - Nestled in the southwestern portion of Cochise County and south of Huachuca City, Sierra Vista is roughly 182 square miles.
  - Sierra Vista is full within the cold semi-arid climate of mid-altitude Arizona.
  - There were 2 well-maintained parks, over 13 exercise facilities, and many outdoor recreation facilities.
  - Bus services were delayed due toCalls staffing and Publicans were available to persons with disabilities.
  - Transportation was overall mostly observed pedestrian.

REFERENCES
- **Summary Analysis & Results**
  - **Ages of Strength**
    - Sierra Vista had beautiful sunny weather, and was the state's capital of the United States.
    - It was a quiet area and offered a nice place to retire for older adults.
    - There were many activities for older adults, or young children, especially at the public library.
  - **Summary Analysis & Results**
    - Sierra Vista had well-maintained parks, plenty of gym, and opportunities for hiking.
    - There were many grocery store chains and stop shops containing shopping necessities for residents.
  - **Ages of Opportunity**
    - Active duty military and veterans had difficulty getting medical attention, even on bases.
    - There was an overall shortage of medical staffing, specifically maternal and women's health services.
  - **Ages of Opportunity**
    - Most residents were commuting to Tucson for better quality of care and more variety of care.
  - There was a lack of things to do, being right, for young adults to middle-aged adults.
  - Commercial buildings found many vacancies which could be due to oversize lack of industry.

CONCLUSIONS
The survey found there to be an economic disparity shown by the increased cost of housing, but lower income levels of most residents. There was a large homeless population in Sierra Vista not accurately described by the data available. Additionally, a lack of Healthcare resources was identified as most residents transition to Tucson for healthcare needs. Through grassroots assistance and community programs, the SAAHEC is hoping to bring positive change to the community of Sierra Vista.
A Community Assessment of Vail, Arizona

Jimenez-Celaya, M., Krebs, K., Kronenberger, C., Kuretche, J., Litz, K., Maynard, K., Melendez, K., & Valenzuela, I.

SAAHEC Scholars 2022-2023 & Dr. Johnston, L. (Mentor)

INTRODUCTION

Vail is a growing, unincorporated community located southeast of Tucson, Arizona. The heart of the Vail community is their prestigious and highly regarded Vail School District which is one of the top school districts in Arizona. Vail has many different resources, such as a public library, fire departments, senior services, and healthcare clinics in and near the area. However, Vail is a large area where those on the outskirts of the Vail area in need of services, and offer the schools and community with many issues.

Many of these issues include mental health access to residents and adults with disabilities in the community, healthy food options, and lack of primary care physicians.

METHODS

- Internet data collection using census data and other federal and municipal resources

- Interviewed with Misti Bourn who is the Assistant Principal Dean of Students, Safety Director, Resource Educator, Special education, Student Achievement, Inclusion Specialist, and Co-Specialist at the Vail School District.

- Community observation and feedback assessment data collection via social media presence, Research Vail Group

- Community workshop survey 11/05/2022

- Interview with event coordinator at the Vail Health Expo for senior citizens (11/13/2022)

- Key informant interviews during the Vail Health Expo with senior citizens, municipal groups, CAM group members, food service, grooming, etc.

FINDINGS

Community Health Resources

- United Community Health Center, Vail Valley Family Health Care, Vail weight loss center, Vail Internal Medicine, Dentists of Vail, and a Physical therapy clinic

Communications

- The "Vail" newspaper

- There is one main (785) post office, one police post office, three collection boxes, and an Amazon locker

- Various wireless communication services

- Fast and reliable internet services

Safety and Transportation

- Two police and fire departments (Tucson Valley Fire District and the Coronado de Tucson Fire District)

- Pima County Sheriff's Department oversees law and order in the community

- No public transportation, a typical household had two cars and most commute on average 31.1 min (compared to US average of 26.4 min)

NUTRITION

- Many locally owned businesses

- Fast food options

- Grocery stores

Resources

Resourses Bank

Provides food to low-income families, seniors, or individuals. Their services include:

- The Emergency Food Assistance Program (TEFAP)

- The Community Senior Food Program (CSFP)

- The Vail school playgrounds are used as parks when open

CONCLUSIONS

Survey and interviews identified the primary area for improvement in Vail, AZ to access to mental health resources, especially in schools. The school district is a top performing school district in Arizona and an optimal location for providing mental health resources. Through SAAHEC funding, it is the vision that a program could be implemented to provide mental health resources in the schools in Vail.

RESOURCES

- [Website Link]

- [Contact Information]

ACKNOWLEDGMENTS

- Misti Bourn, Program Director, Special Education, Student Achievement, Inclusion Specialist, Co-specialist, Parent Liaison, Center of Disability, A reality Director

- [Additional Acknowledgments]

- [Dr. Laine Arabin (Mentor), Southern Arizona VAEDC]
COMMUNITY HEALTH ASSESSMENT - SHOW LOW, AZ


INTRODUCTION

Show Low is a city located in southern Navajo County at the base of the White Mountains of Arizona. The medically underserved population falls within the Colorado Plateau region of the Arizona Health Education Program (AHEC). This program supports a wide range of educational and programmatic goals, as well as aiding students in professional careers related to serving communities with these populations struggling for healthcare access. These programs reinforce the strength Show Low has in pursuing collaborative efforts to enhance their overall quality of life and care.

The purpose of this presentation is to report the results of a team-based field experience in a rural community.

HISTORY & CULTURE

Show Low was established in 1878 by local rancher Cora Lee Cooke. The result of winning an intense poker game, the town was named after Cooke’s curiosity by choosing the lowest card. The town slogan goes, “The City Nurtured by the Twin of a Gun,” and several local monuments commemorate Cooke’s victory. Show Low was incorporated in 1915, and since then has seen many changes―enduring a lot of growth. Pioneered by CLS’s Small Town Team, this community is very close-knit, especially the Church community. While 56.4% of the community does not practice a religion, 22.6% of the population practice Mormonism, followed by members of the Presbyterians (11.5%), Catholics (1.1%), Orthodox (0.2%), and other (5.6%) churches.

The growing number of small businesses are pushing to attract visitors, who are welcoming, asking to take notes, and also receiving tips. The area is often frequented by tourists, especially in the summer. With a proximity to a plethora of natural attractions, skiing, hiking, fishing, and other outdoor activities are enjoyed throughout most of the year. During winter months, snow sports are available just thirty minutes away from the city.

FIVE CORE COMMUNITY STRENGTHS AND OPPORTUNITIES

DEMOGRAPHICS

- 11,623 residents

Show Low is a predominantly White (88.64%) community that has a current annual growth rate of 0.05%. The average household income in the city is $53,377 with a poverty rate of 18.25%.

The majority of the community has been born and raised in Show Low and rated their overall residences at 92.13%. This community supports the small-town feel, amidst family values, and a safe place where everyone supports one another in times of need.

The median age of Show Low is 41.5 years, with almost half of the population living younger than 18 or over 65 years. Both social and private care facilities provide one of Show Low’s biggest opportunities for support, as a significant portion of the community is likely to need support.

ECONOMICS

- IP: Show Low the median home value (15 years) is $125,893
- The top industry present is educational services, health care and social assistance.
- 48.1% of residents work in management, business, science, and arts occupations, which only 8% work in production, transportation, and material moving occupations.

- The Occupational diversity of Show Low is relatively low, as shown in the chart below:

<table>
<thead>
<tr>
<th>Field</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational services</td>
<td>15.86%</td>
</tr>
<tr>
<td>Health and Social Assistance</td>
<td>15.52%</td>
</tr>
<tr>
<td>Management, Business, Science</td>
<td>33.78%</td>
</tr>
<tr>
<td>Arts</td>
<td>8.25%</td>
</tr>
<tr>
<td>Production, Transportation</td>
<td>13.56%</td>
</tr>
<tr>
<td>Material Moving</td>
<td>12.12%</td>
</tr>
</tbody>
</table>

ENVIRONMENT

- Show Low is the largest city in the White Mountains, and sits at an elevation of 4,900 ft.

- The seasons are distinct in Show Low. The average annual rental is 17 inches. The average annual snowfall is 20 inches. There are 205 average annual days of sunshine.

- In a state of being, Show Low’s climate is generally dry and cool. However, the flora is varied in some places and well adapted in others. In the more affluent communities, this flora is more maintained.

- The town is located in the White Mountains, and the climate is generally dry and cool.

- The town is located in the White Mountains, and the climate is generally dry and cool.

COMMUNICATION

- Internet usage is less utilized in comparison to larger cities due to ease of access to internet and providers available in public spaces.

- The public library, city council, and health department are major sources of communication within Show Low.

- The board of education meets monthly to discuss important school-related issues.

- The church community is also very strong in Show Low. Thus a lot of communication is passed through church activities.

CONCLUSIONS

Show Low is located in a beautiful area that is able to satisfy the majority of its residential needs. Its small town culturally promotes and protects a strong sense of community that the residents enjoy. In recent years, the city has continued to grow rapidly, which has encouraged the services sector to keep up. In regards to our AHEC mission, we have shown to identify and build initiatives that promote more access and quality of care to Show Low and the people who live there.

REFERENCES

- Health Care in America: AHEC, National AHEC Office.
- Community Health Assessment - Show Low, AZ
- Arizona Health Education Program (AHEC).
- The Community at Work: AHEC, National AHEC Office.
- Community Health Assessment - Show Low, AZ

AVAILABLE HEALTH PROGRAMS

- Health Care in America: AHEC, National AHEC Office.
- Community Health Assessment - Show Low, AZ
- Arizona Health Education Program (AHEC).
- The Community at Work: AHEC, National AHEC Office.
- Community Health Assessment - Show Low, AZ

COLORADO PLATEAU CENTER FOR HEALTH PROFESSIONS AT NORTH COUNTRY HEALTHCARE

THE UNIVERSITY OF ARIZONA AHEC AREA HEALTH EDUCATION CENTER
Analysis of Statistics Utilized in Primary Articles in a High Impact Journal: A Prelude to Practical Pedagogy in Biostatistics
Asahi Murata MS2, MPH, Emma Kari MS2, & Eric vanSonnenberg MD

Introduction & Background
- Biostatistics increasing focus in clinical professions curricula and a topic on USMLE
- Clinicians in practice may not have received biostatistics training likely can benefit from clarification and instruction of statistical methods

Objective
- Document and evaluate statistical methods in high-impact factor journal
- Develop a statistical guide that can be applied to facilitate interpretation of statistics for medical students and practicing clinicians

Materials & Methods
- Analyzed 100 most recent primary articles dating from November 2021 in Journal of Intensive Care Medicine (JICM; IF 2.35)
- Data extracted by 2 MS2s
- Data assessed for:
  - Study temporality & design
  - Types of descriptor variables & statistical tests
  - Subgroup analysis:
  - Retrospective cohort vs prospective cohort

Results (see Figures 1, 2, & Table 1)
- Retrospective studies most common 75/100 (75%), then prospective studies 23/100 (23%)
- Cohort studies most common 61/100 (61%), then case series 9/100 (9%)
- Most common descriptors: percentage/frequency 100/100 (100%), median 71/100 (71%), average 71/100 (71%) & interquartile range 68/100 (69%)
- Most common statistical tests: Chi-square 59/100 (59%), logistic regression 40/100 (40%), Wilcoxon 46/100 (46%) & T-test 42/100 (42%)
- Retrospective cohort vs prospective cohort: Higher use of Chi-square: 44/63 (70%) vs 8/18 (44%)
  Logistic regression: 40/63 (63%) vs 5/18 (28%)

Table 1: Subgroup analysis of descriptive variables & statistical tests in retrospective vs prospective cohort studies

<table>
<thead>
<tr>
<th>Descriptive Variable</th>
<th>Retrospective (N=75)</th>
<th>Prospective (N=23)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage/Frequency</td>
<td>100/100 (100%)</td>
<td>100/100 (100%)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>71/100 (71%)</td>
<td>71/100 (71%)</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>71/100 (71%)</td>
<td>71/100 (71%)</td>
<td></td>
</tr>
<tr>
<td>Interquartile Range</td>
<td>68/100 (68%)</td>
<td>68/100 (68%)</td>
<td></td>
</tr>
<tr>
<td>Chi-square</td>
<td>23/70 (70%)</td>
<td>4/44 (44%)</td>
<td></td>
</tr>
<tr>
<td>Logistic Regression</td>
<td>42/63 (65%)</td>
<td>5/18 (28%)</td>
<td></td>
</tr>
<tr>
<td>Wilcoxon</td>
<td>4/63 (65%)</td>
<td>5/18 (28%)</td>
<td></td>
</tr>
<tr>
<td>T-test</td>
<td>4/63 (65%)</td>
<td>5/18 (28%)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions
- Retrospective & cohort studies most frequent
- Chi-square test in majority of studies, particularly in retrospective cohort studies
- This statistical analysis should help training of medical students, practicing clinicians, & writers of scientific papers

Future Directions
1) Larger scale study, similar method
2) Practical guide on statistical methods for prospective writers

Acknowledgements
Thank you to Dr. vanSonnenberg for his guidance, support, and enthusiasm throughout this project.
People engage in more health protective behaviors when they live in connected communities.

BACKGROUND
- Half of a person’s health status is influenced by Social Determinants of Health (SDOH) and one-third to individual health behaviors.
- We developed and validated a novel Community Connected Classification (C3) to characterize regional positive SDOH factors evaluate health behavior associations.

METHODS
- Production level data from the American Community Survey and Behavioral Risk Factor Surveillance System.
- We used PCA to identify and create three components to represent classifications.
- 118 US states with available complete data.

RESULTS
Communities with higher C3 scores: 1) have higher household income, 2) are above the federal poverty line, 3) are considered food secure, 4) have internet access, 5) attained higher education, and 6) have a primary care provider.

C3 when adjusted for demographics, technology access, and geography was significantly inversely associated with Southern Arizona population rate:
- Obesity (B=-0.20; 95%CI: -0.35, -0.06)
- Low fruit and vegetable intake (B=-0.33; 95%CI: -0.51, -0.19)
- Physical inactivity (B=-0.22; 95%CI: -0.48, -0.16)
- Smoking (B=-0.34; 95%CI: -0.62, -0.07)

COMMUNITY CONNECTEDNESS CLASSIFICATION AND ASSOCIATION WITH HEALTH BEHAVIORS IN SOUTHERN ARIZONA: A GEOGRAPHICAL ANALYSIS
Meghan B. Skiba, Carille Fellon, Kimberly Lind, Christopher Krupnik, Chris Segrin
This research was supported by a Making Action Possible Grant awarded to Dr. Skiba from the University of Arizona Biostat College of Management and the University of Arizona Cancer Center Behavioral Measurement and Interventions Shared Resource at the University of Arizona Cancer Center (P30 CA023074).
Average Daily Blood Pressure as a Measurement of Efficacy of a Telemedicine Intervention Among Tonto River Basin Residents with Hypertension

Sara Hurst, RN, BSN, FNP-Student
Northern Arizona University School of Nursing

Introduction

For the residents of the Tonto River basin who have reduced access to care especially due to the flooding of the Tonto river, a telemedicine program is being implemented to increase access to health services.

Via remote monitoring of patient’s vital signs and electrocardiogram combined with videoconferencing with healthcare providers, the idea is to reduce both the incidence of hypertension in the Tonto river basin and to reduce cardiovascular risk via optimal management of hypertension in those already diagnosed.

Problem

High prevalence of hypertension – 1 out of 4 adults have hypertension and is inadequately managed (Santo et al., 2012). Poorly treated hypertension can lead to coronary artery disease, heart failure, renal failure, and stroke.

Treatment is straightforward, but the asymptomatic nature of the disease makes it difficult to treat.

PREOT Question

Will implementation of telemedicine for the adult residents of the Tonto River basin with hypertension improve biomarkers of health compared to adult residents without implementation of telemedicine over the year?

Population

- Individuals who are at risk for developing hypertension and require screening
- Need to rule out white coat hypertension
- Are underserved and rural
- Are immunocompromised individuals who may be at risk for infection
- Have significant physical limitations (Grebow et al., 2020).

Setting

Tonto Basin, AZ

- Patient to clinician ratio: 2,000:1
- Median age 65 years old
- Household income $43,000

During measurements or after measurement, the Tonto Creek floods cutting half of the residents off from access to services.

Review of the Literature

- Cost effectiveness and improved patient satisfaction (Santo et al., 2012)
- 85% of people had a reduction in systolic and diastolic blood pressures compared with standard treatment (Kalman et al., 2002) and (Hattler, et al., 2012)
- Potent impact of telemedicine on cardiovascular disease (Vickery et al., 2001)
- Uses for telemedicine include screening for hypertension, management of medically underserved populations, management of high risk, older adults, or those with multiple comorbidities (Kemben et al., 2009).

Best Practice

In rural areas where primary providers are in short supply, telemedicine greatly improves access to care.

Reduction costs can mitigate the negative impact of reduced reimbursement rates on small rural practices.

The proposed intervention would have a threshold outcome: improvement of the overall health of the population of Tonto River setting patients who previously had no access to medical care and preventative services gathering of information for the creation of a standard protocol for blood pressure management over a telemedicine setting.

Blood pressure management is tricky if patients are seen only once a year.

A standard protocol for following up with patients and allowing them a role in their own care by checking their blood pressure from home, the goal is to achieve a greater reduction in blood pressure.

The telelink equipment being used will ensure that there are no calibration problems or potentially faulty equipment. Patient participation will of course be voluntary, but with their feedback and data, the hope is to devise a useful tool for future generations of students and telemedicine users.

Conclusion

Remote patient monitoring with telemedicine enables healthcare providers to provide services to patients at reduced costs to the patient and provider.

- Provide care to patients in the comfort of their own homes.
- Allow for a more accurate assessment of blood pressure.
- Mitigate infection risk.
- Prevent the reduced access caused by physical isolation of patients (in the case of the Tonto River flooding during monsoon season).

- Provide care to persons with physical disabilities who are unable to travel.

References


Hypertension in Primary Care

College of Health & Human Services
School of Nursing
Name: Jamie Biggers
Faculty Sponsor: Shelley Vaughn

Purpose of the Project

Hypertension is a global public health issue contributing to an increased risk of cardiovascular disease, developing and the development of complications which can decrease quality of life and eventually death (Perk et al., 2016). Close to 1 in 5 adults in the US (approx. 115 million) have high blood pressure: most (approx. 91.1 million) do not have their high blood pressure under control (JAMA, 2019). Hypertension is the most important treatable risk factor for stroke (Centers for Disease Control and Prevention, n.d.). The goal is to decrease the number of patients with uncontrolled hypertension seen at the clinic.

Clinical Question

Can Primary Care use a team-based educational multi-visit approach to bring uncontrolled hypertensive patients into a controlled range?

Review of the Literature

Medication adherence is crucial to accomplish and maintain BP control; however, barriers to optimal medication adherence are intricate and multi-dimensional, especially for rural patients (Wu et al., 2018). Examples of barriers for patients can be a lack of knowledge, stress, depression, and anxiety as explanations for delaying implementation of a healthier lifestyle (Odeyelos et al., 2019). In a primary care setting, one prominent hypertension care barrier was discovered to be not the acceptance of a BP level higher than the recommended target, another reason is also competing medical issues (Odeyelos et al., 2019). Team-based care is superior to standard approaches (Odeyelos et al., 2019). By ensuring the prompt detection and proper management of high blood pressure can contribute towards decreasing death and disability (Lipton, 2019).

Setting

Rural healthcare clinic located in Sahuarita, AZ. Clinic has 5 family medicine doctors, 3 nurse practitioners, 1 physician assistant. Patients come from the communities of Sahuarita, Sahuarita, and adjacent small communities surrounding the Gila Valley.

Patient Population

Patients seen at the clinic with uncontrolled hypertension by all providers in rural healthcare clinic in southern Arizona. Uncontrolled hypertension of greater than 140/90. Age 18 and older.

Conclusion

After a high reading (>140/90) in office, the patient is encouraged to take home blood pressure measurements. After a 7-day period a medical assistant will call the patient to check home readings.

Proposed Best Practice

• After the new policy, if the readings remain high, the patient will be scheduled for a nurse visit, provider visit, or home health visit with a qualified clinician using a digital service.

• Provide education to patients during nurse visits or provider visits regarding hypertension and treatments.

• This group will be compared to the patient population without blood pressure follow-up prior to the introduction of the new policy.

• The outcome should show a decrease in uncontrolled hypertensive patients coming into the clinic.

• One of the low-level barriers and a factor in non-adherence to pharmacological treatment is not having adequate follow-up of the disease (Monteleone et al., 2022).

References

https://www.cdc.gov/chronicdisease/hbp/index.htm


Utilizing low-cost interventions to assist patients in controlling blood pressure could improve the morbidity and mortality experienced later in their lives. It can also decrease the burden on the healthcare system and resources.

• Primary care clinics can intervene using simple team-based approaches to monitor and treat uncontrolled hypertension patients in their care.

• Suggest at least a year after implementation to evaluate results.
Impact of Covid-19 Pandemic on Incidence of Complicated Appendicitis: A Retrospective Study

Tommy Hall, MD; Zita Trotter, MD; Shabani Shahwar, PhD; Katherine Barlow MA; Colin Herbst BS; Eric Jackson BS
Creighton University Department of Emergency Medicine, University of Arizona College of Medicine-Phoenix
Participating Sites: Valleywise Health Medical Center

ABSTRACT

Purposes: The COVID-19 pandemic has been noted to affect hospital-based medicine in various ways, including changes in patient volume, presentation, and treatment. To our knowledge, there have been no published reports comparing the incidence and presentation of complicated appendicitis during the COVID-19 pandemic to the pre-pandemic period. This study analyzed data from the Valleywise Health Medical Center (Phoenix, Arizona) to determine if there were any differences in the incidence, presentation, and management of complicated appendicitis during the COVID-19 pandemic compared to the pre-pandemic period.

METHODS

We performed a retrospective analysis of all patients aged 0-99 years who presented to the Valleywise Health Medical Center, Phoenix, Arizona for acute appendicitis from January 1, 2018 to December 31, 2020. Patients were classified as having complicated appendicitis if they met the criteria for appendiceal perforation or appendiceal abscess. The primary outcome of interest was the incidence of complicated appendicitis during the COVID-19 pandemic compared to the pre-pandemic period. Secondary outcomes included length of stay, total hospital costs, and rates of appendiceal perforation. Data were collected from electronic medical records and analyzed using chi-square tests and t-tests.

RESULTS

The incidence of complicated appendicitis during the COVID-19 pandemic was 41.7 per 100,000, compared to 30.0 per 100,000 during the pre-pandemic period (p = 0.03). The incidence of appendiceal perforation during the COVID-19 pandemic was 21.4 per 100,000, compared to 9.1 per 100,000 during the pre-pandemic period (p = 0.001). There was no significant difference in the incidence of appendiceal abscesses during the COVID-19 pandemic compared to the pre-pandemic period (p = 0.29).

DISCUSSION

Our study found a higher incidence of complicated appendicitis during the COVID-19 pandemic compared to the pre-pandemic period. Other studies have reported a higher incidence of appendicitis during the COVID-19 pandemic, which may be due to changes in healthcare utilization and patient presentation. The higher incidence of appendiceal perforation during the COVID-19 pandemic may be due to delays in presentation or worse presentation of appendicitis during the pandemic. The results of this study are important for healthcare providers and policymakers as they plan for the future of healthcare delivery during public health crises.

REFERENCES

**The Impact of Wellness Events and Social Support on Reducing Burnout in Third Year Medical Students**

**Jeremy Winkelman, MSS; Judith Hunt, MD; Jonathan Carstens, MD**

**University of Arizona College of Medicine-Phoenix**

### Introduction

Burnout is a state of emotional, mental, and physical exhaustion that results from prolonged stress and demands on an individual. Medical students are particularly vulnerable to burnout due to the high-pressure environment of medical school. Burnout can have significant impacts on medical students. Burnout can lead to impaired academic performance, emotional exhaustion, physical symptoms, decreased empathy, and increased risk of mental health issues.

One survey found that approximately 45.2% of third year medical students report some symptoms of burnout. The Longitudinal Integrative Curriculum (LIC) places third year medical students in one setting, in this case Payson, Arizona, for the majority of the required core clerkships. This project set out to determine if frequent wellness activities would decrease burnout among the LIC participants.

### Materials and Methods

- LIC students were placed in Payson, Arizona for approximately 9 months to complete the core clerkships including internal medicine, family medicine, OB/GYN, surgery, emergency medicine, and pediatrics in a longitudinal setting.
- Throughout these nine months, student wellness leaders prepared a variety of wellness activities, approximately one to two every month.
- These activities included group hikes, camping trips, painting nights, pizza parties, karaoke nights, attending the rodeo, line dancing, boardgame nights, and group dinners.
- A digital survey was sent out to LIC participants which asked them to compare their baseline burnout levels to their burnout levels after wellness activities.
- The scale used in the survey was ranking burnout levels from 1-5, with 1 being the least amount burnt out, and 5 being the most.

### Results

- 8 students responded to the survey and rated both their baseline burnout level and burnout after wellness activities from 1 to 5.
- The average baseline burnout level was 3.63, and the average post wellness burnout level decreased to 2.69.

### Discussion and Conclusions

- The survey results suggest that the introduction of wellness activities over the course of the third year of medical school reduced burnout.
- Every student, except for 1, reported that the activities reduced burnout to some degree, and overall it brought down burnout levels by 26%.
- This suggests all third-year programs should incorporate wellness activities to reduce burnout.
- Next steps of this project would be to expand the number of participants surveyed and to compare results to non-LIC students.

### References

Title
Improving Outcomes in Primary Care
College of Health & Human Services
School of Nursing
Name Sandra Olson, MA, BSN, RN
Faculty Sponsor: Dr. Shelley Vaughn

Purpose of the Project

The purpose of this project is to show simple, existing, and accessible tools that can be used to increase treatment compliance and access to healthcare.

Clinical Question

Can utilizing reasonable and available resources improve patient outcomes?

Proposed Best Practice

Promoting the benefits of assessing patients for depression at every visit.

Providing education and support to bridge the technology gap and fully utilize all the benefits the impact on outcomes.

Advocating for the expansion of telehealth.

Review of the Literature

Depression is a condition linked with less optimal outcomes in patients (Goldstein, et al., 2017).

Smartphones echo opportunities for utilization of health services (Khan & Khuso, 2018).

Telehealth is not being used ubiquitously (Kruse et al., 2020).

Problem

Medication and appointment adherence continues to be an obstacle in the delivery of healthcare.

Lack of a multi-dimensional approach will continue to yield interventions which little to overcome barriers.

The problem of healthcare access is real.

Conclusion

Assessing and treating for depression can help with treatment compliance.

Studies have long shown that there is a strong correlation between mood and conviction related to adherence of treatment plans.

Government subsidy has allowed for access to specialized technology and as cited in this project, the advent of such tools has proven to help with reminders for medication and appointments.

Financial and work (?) challenges; certain disabilities and access to health care precludes many from being able to obtain care. Expansion of telehealth might help.

CDC Data

- Delay in receipt of needed medical care, nonreceipt of needed prescription drugs, and satisfaction of needed health services during the past 12 months by state:
  - United States, total:
    - 2017-2018: subject reliability of data

- Observation: Two Age Groups.
  - Non-working group: very old (young)
  - Working age 18-64

- Inferences suggesting further studies
  - Non-working group: higher access
  - Working group: lower access
  - Least care coincident with economic crisis of 2009
Inaugural AHEC Undergraduate Scholars Program

Background

Objective: This case study examined experiences with the first Arizona Area Health Education Centers (AHEC) Scholars Program for Undergraduates.

Background: Launched Fall 2021

Project Aim: To expose undergraduate students to rural and underserved communities in the 5 Regional Centers through interprofessional teams

Participants: N=39
- UA—Nursing, Nutrition, Pre-med
- NAU—Dental Hygiene
- Students selected by their respective university mentor

Completion rates
- 12 completed the program
- 2 a leave of absence returning the following semester
- 7 withdrew
  - dropped out of academic program (1)
  - academic program demands (6)

Data Collection

- Anonymous end-of-the-semester surveys
- Observations by faculty mentors
- Team/self evaluations
- Discussions with AHEC Regional Centers

Results

Successes

- "I have a different perspective on homeless people as well as refugees. I am very appreciative of the experience I had with AHEC."

- "I loved attending the AZMOM event again this semester. It is so impactful, and I hope it continues in the future.

On-site immersion highlights
- Flagstaff scavenger hunt
- Visiting patients in skilled nursing facility
- Touring New Leaf Homeless Shelter
- Participating with grand moms

- "I absolutely loved getting on inside view in underserved communities because it made it more real to me. I appreciated the more hands-on events, they really helped me with my learning."

- Community projects
  - El Rio food distribution
  - Veterans Stand Down

- Flex activities
  - AZ Mission of Mercy
  - Casa Alita for asylum seekers
  - AZ Rural Health Conference
  - Monthly seminars
    - Working with the deaf community
    - Native American Zombie Apocalypse game

Conclusion Recommendations

The AHEC Scholars Program is a valuable opportunity to recruit undergraduate health professional students to work in medically underserved and rural communities through meaningful on-site immersions and interactive didactic experiences. Recommendations for the future include placing undergraduate scholars in teams with graduate scholars at one Regional Center.

Acknowledgments

- Our many guest speakers
- The curious scholars
- The Regional Centers
- AHEC office
An Introductory Guide to the Operating Room

Colton Cowen, MS3; Judy Hunt, MD; Jonathan Carlson, MD
University of Arizona College of Medicine–Phoenix

Introduction
Working in an operating room is a fundamental aspect of medical training. However, for many medical students, their first experience in an operative setting doesn’t come into their third year clerkship training. As a result, many report feeling underprepared for, and intimidated by, this experience. Likewise, medical personnel in ORs have reported that students often lack proper training in OR etiquette, scrubbing techniques, and awareness of proper sterile field maintenance. In addition, early exposure to the operating room and better preparedness for this experience is associated with an increased in expressed interest in pursuing future careers in surgical subspecialties amongst medical students. For this reason, we sought to create an overview and interactive class to serve as a practical guide for young medical students and non-surgical hospital employees to be completed prior to entering an OR.

Core Tenants of Guide
- Cardinal Rules
  - How to maintain a sterile field
  - How to maintain personal safety and patient safety
  - How to prepare adequately for a case
- Setting up the patient
  - Emphasizes the unique expectations and responsibilities of the medical student
  - How to scrub
  - How to scrub with proper technique and when to use different forms of sterilization
  - How to glove and gown
  - How to maintain sterility during the gowning/gowning
  - Professional behavior towards colleagues in the OR, including scrub techs and nursing staff
- Etiquette
  - General dress code, ways to maintain sterility, and expectations for medical students
  - Definitions of common tools
  - Tips and tricks for success

Outcomes
Projected outcomes for this project will be measured via a survey distributed to MS3 students at the beginning of their clinical rotations, and at the end of their surgical clerkships. Objective measures of success will include:
- Subjective feelings of preparedness for OR experience
- Adequacy of knowledge of techniques such as scrubbing, gowning, and gloving
- Awareness of OR etiquette
- Enthusiasm for surgical specialties as a whole
- How likely students would be to recommend guide to others

Discussion and Conclusions
- Medical students often feel unprepared and intimidated by the operating room
- Medical staff in the OR reports that medical students often lack knowledge of fundamental etiquette and sterile techniques
- A comprehensive guide for medical students increases student confidence and success in their surgical clerkships

Abstract
Due to the rural nature of Payson, Arizona there is a need for professionals and students to be in an operating room possibly scrubbed in, when they may never have previously done so. In order to help increase comfort of the individuals, as well as the safety of the patient, this project, in coordination with the surgeons and surgical technicians, created an orientation program for those new to an OR. Covering the basics from how to maintain surgical sterility, orientation to basic OR tools, and possible actions an individual new to an OR may be asked to perform. Because of the longitudinal interprofessional campus, this class is written up to be handed off to following classes. The guide was written for a target audience of MS1-MS3 medical students, either prior to shadowing experiences, or prior to surgical clerkships. Special emphasis was placed on outlining the specific expectations for students in the OR, such that students would feel more prepared for their unique role in this setting.

References
Mental Health Matters: Community Outreach Project

Adriana Arana, Lidia Arubird Sierra, Katherine Barklow, Marian Beeck-Anderlini, Karen Chan, Megan Coomer, Darya Dowlat, Yedid Galvan, Nathan LeNguyen, Elisabeth Lavio, Jalaln Ohr, Stephanie Qualman, Michelle Roberts, Jenna Visop, and Maximilian Young

INTRODUCTION
- Present in a small city located in Yavapai County.
- Limited access to social services and inadequate availability of mental health resources.
- Community programs need to improve access services that have been successful to better utilize scarce resources.

METHOD
- 110 students from three core universities.
- Video-based education conducted at first year of program.
- Telehealth and distance learning programs have limitations.
- Telehealth and distance learning programs have limitations.

FINDINGS
- The research was designed to address the community's need for awareness in mental health resources.
- The community partner advocated that the mental health issues have been less prominent.
- The subsequent intervention that Arizona has highlighted social emotional learning programs as a new intervention approach.
- The outcomes from the mental health issues have been less prominent.

OUTCOMES
- Strengths:
  - QH code shares for easy access to mental health resources.
  - Mental health needs link to the adolescent population in a format that they respond to.
- Opportunities:
  - Project could serve as a legacy project for other Yavapai individuals.
  - QH code shares for easy access to mental health resources.
- Challenges:
  - Adolescent content can be edited and suggested into a professional website with better analysis and tools to improve consumer interaction.

CONCLUSIONS
- Addressing mental health concerns is a priority that deserves amplification.
- Offering mental health services in a manner that appears to be more approachable.
- Providing resources in small communities that utilize video-based programming followed by a plan to access to mental health resources.
- This project is feasible and can be integrated into other community initiatives.

ACKNOWLEDGEMENTS
Leslie Duran and Michelle Tester, CAMAEC Office (335) 899-3120 | 3120 E. Summit Ave. | Prescott, AZ 86301 | (928) 222-2700 or 855-899-3120 | 335-4303 | www.aphc.org | www.camaec.org | www.camaec.edu

REFERENCES
The Payson Christian Clinic and the Warming Center: Bringing care to where it's needed

Colton Cowan, MSW; Judith Hunt, MD; Jonathan Carlson, MD
University of Arizona College of Medicine-Phoenix

Introduction to the Warming Center

Payson, Arizona is situated in the middle of the Tonto National Forest with a total population of 15,776, an average income of $55,000 per household. It is also home to an estimated 2,200 individuals struggling with homelessness and living in the forest surrounding Payson. The Warming Center is an organization that offers a hot meal, hot shower, clothes, and connections to aid. Additionally, in the winter when temperatures become freezing, the Warming Center utilizes its bunkhouse to allow those interested a night out of the elements. Originally started with a vision to help the large population of veterans, the warming center has expanded their scope to any individual or family that arrives.

Mission for the Clinic

Our mission was to establish a medical presence at the Payson Christian Clinic and in cooperation with the Payson Christian Clinic. In so doing, interprofessional longitudinal students are the continuity for those individuals within the health care system, in many cases being able to follow them to their primary care visits or to the ER in emergencies. Because of the longitudinal interprofessional component, the project will be continually handed off to the following class members. Building continual trust and relationships between the community and those in healthcare.

Outcomes

Success will be measured via surveys distributed to medical students participating in this project; metrics will include:
- Subjective satisfaction with the experience
- Perception of practical skills and knowledge gained through experience
- Confidence in patient interactions gained for future career
- Importance of experience in shaping future specialty goals

In addition, demographic data of patients will be collected to better identify needs in the community. Data such as:
- Insurance status prior to encounter
- Whether patient has an established primary care physician (PCP)
- Last time patient visited PCP
- If not within 2 years, what reason is keeping them from seeing PCP.

Introduction to the Payson Christian Clinic

The Payson Christian Clinic was started by three local doctors in response to the growing numbers of uninsured in northern Gila County. Working with medical and health students, the clinic provides care to anyone who arrives. Any one who arrives uninsured and underinsured. By doing so, it allows for a healthier community as everyone now has access to care, regardless of insurance, has access to preventive and chronic care.

Services provided

The clinic at the Warming Center allows medical and other health profession students provide general health screenings to attendees of the Warming Center. The longitudinal students assist with insurance difficulties such as applying for AHCCCS, checking status, and assisting in the establishment of primary care providers for individuals and families. For those that do not qualify for AHCCCS patients may be referred to the Christian clinic for more long-term care. In cooperation with attending at the Payson Christian Clinic, telemedicine appointments may be performed at the Warming Center for non-emergent basic medical care.
Practice-Based Research & QI to Improve Rural Health

Christy Pacheco, DNP, FNP-BC, University of Arizona College of Nursing

Overview
Role of practice-based research, QI
Opportunity for health professions students to participate in or conduct clinical site-specific projects, impacting:

Workforce development
- Statewide and national workforce shortages across multiple disciplines
- Training health professions students is a critical part of workforce development
- Participation shown to impact recruitment and retention

Interprofessional collaboration
- Engagement of preceptors and stakeholders in professional development

Improving outcomes
- Projects may improve quality or access to care, with minimal site resources.

Consider the Quadruple Aim

Practice-Based Projects
Plan-Do-Study-Act (PDSA) Model

Academic Resources
- Health professions students frequently have opportunity to participate in or conduct projects at clinical sites.
- Doctor of Nursing Practice (DNP) NP student requirement

Practice Benefits
- Opportunity for professional development, improve patient care
- Maximize academic resources of doctoral programs for design, implementation

Quality Improvement vs Research
- QI tailored to needs of site, resources
- Ask and answer locally clinically relevant question
- Systems approach
- Design for site feasibility, sustainability

Process

Collaboration
- Engagement of site stakeholders
- ID problem and project purpose
- Project Design

Preceptor role
- Consultant
- Member, Doctoral Committee

Approvals
- Site approval for project
- University IRB — ensure human subjects protection

Implementation
- Tailored to site, considering feasibility, sustainability

Dissemination
- Executive summary of findings and future recommendations provided to site

Project Examples
Provider education - Evidence-based practice
- Chronic disease management, Mental health
- Advance directives
- Implement screening tools - depression, sleep apnea

Patient education - tools
- Chronic disease management – DM, HTN
- Prevention

Program evaluation
- Transitional care, telehealth programs
Preliminary data:
4 cohorts of students successfully completed clinical leadership scenario based educational module and an anonymous survey.
All cohorts >75% of students provided ratings on Likert-type scales and with short answers. On 4-point scale, students rated the experience as 3.9 or higher for all items including comments such as:
"With real life application, I learned how important inter-professional communication is and that there are many other people that are experts in their field."

Theoretical Framework
The Information Motivation Behavioral Skills Theory (IMB)

Proposed Methods
Following preparation with role-specific evidence-based readings, fifteen APN students will voluntarily participate in an in-virtual clinical patient conference designed to create conflict. Roles will include patient/patient family, PharmD, physician, case worker, office manager. No student will be designated as the APN leader, instead this role will be intermittently assigned to each student when conflict arises.

- **Information**: role description supported with current evidence-based literature.
- **Motivation**: enhanced with self-exploration leadership styles.
- **Behavioral skills**: acquired as participants practice actively resolving conflicts during the session. IRB consented participants’ responses with a post/pre-survey of leadership confidence and a structured interview.

Implications
- Implementing a theory-guided LEAP education model may be both feasible and effective in improving the leadership potential of novice APNs supporting translation of research into practice.

References

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Purpose
To measure the effectiveness of the Leadership Excellence for Advanced Practice Nursing (LEAP) Nursing Project, a scenario-based educational module to foster leadership skills for advancing holistic, person-centric care for Advanced Practice Nursing students (APNs).

Background
- Increased public demand for holistic health care positions APN to be critical clinical leaders.
- Novice health care APN need preparation to lead in systems traditionally functioning in a medical diagnostic-focused model.
- Currently leadership courses focus on theory applied in written form lacking opportunities to practice (rehearse) patient-centric interprofessional leadership skills.
Promoting Annual Diabetic Retinopathy Screening in Rural Clinics

College of Health & Human Services
School of Nursing
Ryan Mette
Faculty Sponsor: Dr Shelley Vaughn

Purpose of the Project
To promote patient education on the importance of annual Diabetic Retinopathy (DR) screenings for Diabetic patients.

Problem
Despite the availability and ease of getting screened for DR, many Diabetic patients will get some form of DR. Annual screening is the best preventive measure for Diabetic blindness. It is estimated that 1 in 15 Diabetics will become blind from DR. The average compliance rate for DR screening is roughly 60% per year (Hudson et al., 2022).

Patient Population
Type I and Type II Diabetics of all ages, ethnicities, and gender.

Implementation of Interventions
A total of 7 articles (published between 2017 to 2021) were reviewed for this project, consisting of over 5,000 participating patients and various studies that included: systematic reviews, mixed methods studies, qualitative studies, and cross sectional studies.

Review of the Literature

Proposed Best Practice
- Initiate email campaigns to address patient-specific disease processes with a short questionnaire about DR screenings (Beaser et al., 2018)
- Posters reminding patients to get an annual DR screening in each exam room (Kollipara et al., 2020)
- Post-it notes with patient’s current A1C, a reminder to get DR screening, and QR code link
- Promote annual Diabetic educational sessions at the clinic (November is Diabetes month)
- Invest in a high-resolution ophthalmic camera which images can be read remotely at a small price by licensed ophthalmologists

Clinical Question
Patient/Population: Diabetic Patients that currently seek medical care at participating study clinic
Intervention: Referral to an ophthalmologist for comprehensive DR evaluation
Comparison: Other clinics participating in STAR scores of United Health and Medicare
Outcome: Improvement in STAR scores for DR screening. Currently, the clinic has a 1 STAR rating for this category.

Conclusion
- The average compliance rate nationally for DR screening is roughly 60%.
- The use of in-clinic DR screening tools will provide the best annual DR screening compliance rates.
- New technological advancements indicate that Artificial Intelligence is an efficient means for diagnosing DR with high specificity rates and can be performed remotely.
- Targeted DR screening objectives can increase compliance rates.
- Ongoing educational campaigns can increase compliance rates and improve overall health and well-being.
Providing culturally competent care in a gender affirming environment to reduce healthcare disparities

College of Health & Human Services
School of Nursing
Faculty Sponsor: Kara Everhart BSN, RN

PROJECT

Transgender patients are a medically underserved population with a need for culturally competent healthcare providers who offer a gender affirming environment in which to receive care. The goal of this project is to educate healthcare providers and staff on how to bridge healthcare disparities for creating a gender affirming environment for transgender patients through proper use of terminology, professional interaction, and knowledge of transgender care.

SETTING & POPULATION

- Setting: Primary care providers and staff.
- Location: Rural Primary Care Clinic in Payson, Arizona.

PICO

- P: Healthcare providers in the primary care setting.
- I: Provision of culturally competent care in a gender affirming environment.
- C: Healthcare providers who do not provide healthcare in a culturally competent and gender affirming environment.
- O: More equitable healthcare for transgender patients resulting in a reduction in healthcare disparities for this population.

Reasons for Transgender or Gender Nonconforming Nurses of U.S. Emergency Departments

<table>
<thead>
<tr>
<th>Condition/Screen</th>
<th>Reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric</td>
<td>Lack of medical insurance</td>
<td>36.4% (23)</td>
</tr>
<tr>
<td>Blood alcohol level, drug/alcohol, or substance abuse disorders</td>
<td>41% (33)</td>
<td></td>
</tr>
<tr>
<td>Palliative care</td>
<td>Lack of medical care</td>
<td>66% (18)</td>
</tr>
<tr>
<td>Past experience with culturally sensitive providers and/or being asked inappropriate questions</td>
<td>59% (3)</td>
<td></td>
</tr>
<tr>
<td>Past experiences of misgendering by provider</td>
<td>57% (23)</td>
<td></td>
</tr>
<tr>
<td>Physical injury</td>
<td>Need to see gender affirmative providers</td>
<td>40% (4)</td>
</tr>
<tr>
<td>Premenstrual and postmenstrual symptoms</td>
<td>40% (2)</td>
<td></td>
</tr>
</tbody>
</table>

PROBLEM

- A study conducted at 27,178 patients from 2010 to 2016 found that 10% had been treated for transgender healthcare needs.
- This study concluded that 35% of patients treated were not referred to a gender-affirming provider.
- The study also found that 25% of patients treated for transgender healthcare needs were not referred to a gender-affirming provider.
- The study recommended that all patients treated for transgender healthcare needs be referred to a gender-affirming provider.

REVIEW OF LITERATURE

- Articles reviewed for this project: Levels I & II in the evidence table.
- Publication dates: 2018 to present.

Key Points:

- Transgender patients had it in our responsibility to educate providers about their care.
- A study conducted by Mayo Clinic found that only 4% of providers had discussed fertility options with transgender patients before starting them on hormones.
- Transgender patients may not be selecting healthcare due to a lack of gender-affirming therapy. Stress can be a significant factor in delaying care.
- Providers do not provide gender-affirming treatments, which should be the patient’s provider’s care.

RECOMMENDATIONS

- Avoid the term ‘transsex’ or ‘surgical health.
- Use the term ‘family planning’ instead of ‘pregnancy’.
- Avoid the term ‘gender neutral’ when referring to transgender people.
- Use the term ‘preferred’ pronouns. ‘Preferred’ pronouns should not be considered as a barrier.
- Share your pronouns and ask the patient if they choose to disclose their gender identity.
- Explain what procedures are being done and why they are necessary.
- Do not ask unnecessary questions to satisfy your own curiosity.
- Never assume the patient directly.
- Other preventative screening based on organ inventory.
- Ask the patient about their sexual history.
- Focus on Health & Well-being.
- transgender patients are concerned about their sexual health, knowing the patient’s sexual practices and anatomical function is an integral part of their assessment.
- Ask them questions about their gender and sex partners.

TERMINOLOGY

Gender affirmation: Accepting and supporting an individual’s gender identity.
Gender dysphoria: DSM-5 diagnosis assigned to provide gender affirming treatment. Does not fit the sex assigned at birth.

CONCLUSION

Implementation of these best practices will be a step towards bridging the healthcare gap for transgender patients living in Payson, Arizona. A post-test questionnaire was provided to the staff to determine if this presentation provided necessary information or better care for transgender patients. 100% of staff felt better prepared to care for these patients.

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REFERENCES
Screening for Depression in Primary Care

**Purpose of the Project**

The significance to primary care is to bring awareness of depression and the need to mandate screening for depression and mental illness in primary care at every visit.

**Setting**

- **Primary Care Office**
- **Patient Population**
  - Adult patients 18 to 65 years old
- **Clinical Question**
  - Do adult patients that come into the primary care office who answer the depression screenings have better outcomes with diagnosis and treatment compared to those who receive standard care and decline or get missed during the COVID-19 pandemic and how this affects their mental health within the next year.

**Proposed Best Practice**

- Identify problems with questionnaire
- Educating medical assistant staff to do PHQ-2 or PHQ-9 at check in
- Caring for the patient in entirety
- Not treating just the common chronic illness

**Problem**

- The depression screening tools are often being missed by the medical assistants when roaming patients leaving the patient vulnerable.
- Primary care providers having to diagnosis and treat mental health issues because of the shortage in behavioral health services in rural areas.
- Mental health crisis has tremendously increased since COVID-19
- It is only been done 63% of the time in my current primary care practice.
- Patients are being missed and going undiagnosed and untreated.

**Review of the Literature**

- Costantini et al., (2021) explain in a systematic review that depression is a leading cause of disability worldwide.
- Costantini et al., (2021) found that the reliability PHQ-9 has is a primary screening tool and can be used worldwide to identify patients that may be displaying some depression without directly coming saying it.

**Conclusion**

- 37% of patients were already taking antidepressants or seeing a counselor.
- 32% of patients scored mild to no depression from the PHQ-2 and PHQ-9 questionnaire.
- 22% of patients scored moderate to severe on the PHQ-9. Of these patients, 7 patients scored a 10 or greater on the PHQ-9 and were not offered any treatment.
- 5 patients were offered intervention, but no data was included because of time frame.
- Lastly, out of the 72 charts reviewed the 18 patients that were offered intervention and 100% of them showed lower PHQ-9 scores in subsequent follow up appointments.
Serum Lactate as A Prognostic Indicator of Injury Severity in Pediatric Trauma Patients: A Decade Long Review

Shalini Khetaor MD, Erin Jackson BS, Colin Hurkett BS, Katherine Barlow BS, Zoica Trotter MD, Kevin Foster MD.

Introduction
Lactic Acid in Trauma

Prior studies in adult trauma victims have indicated that an elevated serum lactate level immediately post-injury, is associated with mortality and morbidity. Serum lactate levels have also been found to be superior than base deficit as a biological variable in scoring systems built to assess the initial severity of injury in adult trauma patients (1).

However, there are few comparable studies in children. Lawton et al. performed a systematic literature review on the role of lactate in pediatric trauma, of the 63 papers initially identified and reviewed only one was in a child cohort and showed that an elevated lactate level was correlated with injury severity, length of stay, mortality, and mortality (2). A prospective study by Ramamohan et al done over a period of 24 months in 2015 showed that a lactate of over 4.7 mmol/L is strongly suggestive of severe injury in children, while lactate below 2.5 mmol/L is reassuring for not having serious injury. Lactates between 2.5 and 4.7 mmol/L reveal indeterminate in predicting potential for injury or outcomes (3). Although physiological mechanisms in response to traumatic injuries may differ in children, the literature in this topic remains scant.

Trauma activation level is determined by pre-hospital criteria. The American College of Surgeons (ACS) recommends trauma activation criteria; however, their accuracy may be limited. Pre-hospital lactate (LAC) has shown promise in predicting trauma center resource requirements. The study by Brown et al found the ACS+LAC algorithm reclassified patients to more appropriate levels of trauma activation when compared to the ACS algorithm alone (4).

Role of Lactate in Pediatrics

In a prospective study in pediatric trauma patients, Shih et al (5) examined the diagnostic accuracy of a single point-of-care pre-hospital serum lactate for predicting outcomes. The authors found that pre-hospital lactate level was higher in pediatric trauma patients who required critical care, including those who had normal pre-hospital vital signs and Glasgow Coma Scale (GCS).

The role of elevated initial lactate in pediatric trauma is helpful when there are severe injuries but lacks sensitivity and specificity for mild to moderate level of injury. ValleyWise Health Medical Center is level 1 adult trauma and routinely access trauma patients for lactate as part of the initial trauma labs including that for children.

Goals

1. The primary objective is to study if the serum lactate level on presentation in pediatric trauma patients is predictive of clinical outcomes including need for surgical intervention, length of hospitalization and ICU stays, discharge or death.
2. To study the relationship between serum lactate level at presentation and trauma injury severity (Injury Severity Score (ISS) and Glasgow Coma Score (GCS)).
3. To study the relationship between serum lactate levels at presentation and other demographic (age, gender, race/ethnicity) and clinical variables (injury mechanism, trauma characteristics, pre-hospital time, imaging studies, disposition, laboratory studies).

Methods

566 pediatric patients aged 0-19 years who presented to the Emergency Department (ED) for trauma activations were enrolled retrospectively over a 10-year period (June 2010-May 2020). Data collected included demographics (age, gender, race/ethnicity), admission serum lactate, injury mechanism, trauma characteristics, Injury Severity Score, Glasgow Coma Score, mortality, length of stay, need for Intensive Care Unit (ICU) stay, mechanical ventilation, final diagnosis, and disposition. Admission lactate levels were stratified as high if meeting the threshold value of 4.7 mmol/L. The threshold value was derived from previous evidence that lactate levels above 4.7 mmol/L were associated with poor outcomes.

Discussion

Preliminary findings suggest that high admission serum lactate was strongly correlated with death during hospitalization, required emergency procedures, and emergency blood required. There was a significant positive but weak correlation with high serum lactate and ISS, ISS, and GCS levels. This suggests that serum lactate may be a useful indicator of severity in pediatric trauma. This may be particularly useful in a resource limited setting due to the affordability of the lab draw.